4-57 LIGAMENTS OF THE KNEE JOINT, FRONT VIEW

The patella is thrown down and the joint is fixed.

Observe:
1. The indentations on the sides of the femoral condyles at the junction of the patellar and tibial articular areas. The lateral tibial articular area, shorter than the medial one.
2. The subsidiary notch, at the antero-lateral part of the intercondylar notch, for the reception of the anterior cruciate ligament on full extension.
3. The three paired facets on the posterior surface of the patella for articulation with the patellar surface of the femur successively during (1) extension, (2) slight flexion, (3) flexion; and the most medial facet on the patella (4) for articulation during full flexion with the crescentic facet that skirts the medial margin of the intercondylar notch of the femur.

4-58 ARTICULAR SURFACES OF KNEE JOINT
In each illustration one-half of the femur is removed with the proximal part of the corresponding cruciate ligament.

Observe:
1. The posterior cruciate ligament prevents forward sliding of the femur, particularly when the knee is flexed.
2. The anterior cruciate ligament prevents backward sliding of the femur and hyperextension of the knee and limits medial rotation of the femur when the foot is on the ground—i.e., when the leg is fixed.

4-59 CRUCIATE LIGAMENTS

Observe:
1. The bandlike medial ligament attached to the medial meniscus (semilunar cartilage). The cordlike lateral ligament separated from the lateral meniscus by the width of the Popliteus tendon (removed).

2. The posterior cruciate ligament joined by a cord from the lateral meniscus and passing to the fore part of the medial condyle of the femur. The anterior cruciate ligament attached to the hinder part of the lateral condyle.
4-61 CRUCIATE LIGAMENTS AND THE MENISCI (SEMIUNAR CARTILAGES)

The sites of attachment of the cruciate ligaments are colored yellow; those of the medial meniscus, blue; and those of the lateral meniscus, red.

The tibial condyles, the lateral is flatter, shorter from front to back, and more circular; the medial is concave, longer from front to back, and more oval.

The menisci are cartilaginous and tough when compressed between femur and tibia, but ligamentous and pliable at their attachments—such as in the case with other intra-articular fibro-cartilages.

The menisci conform to the shapes of the surfaces on which they rest. Since the horns of the lateral meniscus are attached close together and its coronary ligament is slack, this meniscus can slide forward and backward on the (flat) condyle; since the horns of the medial meniscus are attached far apart, its movements on the (concave) condyle are restricted. The medial meniscus is commonly trapped, injured, and torn.

Note the bursa between the long and short parts of the medial ligament of the knee.